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# Cultural Transmission of Foundational Schemas among Congo Basin Hunter-Gatherers

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## CULTURAL TRANSMISSION OF FOUNDATIONAL SCHEMAS AMONG CONGO BASIN HUNTER-GATHERERS

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**ABSTRACT** Congo Basin hunter-gatherer societies are said to share cultural models, such as egalitarianism, respect for individual autonomy, and the process of giving and sharing. In this paper, we assume foundational schemas as any coherence connected to these cultural models at a fundamental level. In describing the process of reproduction and acquisition of foundational schemas in everyday interaction found in two different societies, we aim to assess whether foundational schemas have the potential to challenge social and ecological changes. For several decades, these societies have faced multiple social and ecological changes. These include sedentarization, the reduction of access to their territory and resources, higher access to schooling, and variable access to health services among others. Considering the increasing access of external actors into their territories, one could wonder what the impacts are on hunter-gatherer's transmission of foundational schemas and cultural knowledge. Therefore, this paper explores the processes of cultural transmission and reproduction of foundational schemas among Congo Basin hunter-gatherer children, by focusing specifically on children's interactions as well as interactions between children and adults, while performing their daily activities. By presenting data from long-term fieldwork conducted among the Mbendjele BaYaka from Republic of the Congo and the Baka from Cameroon, this paper aims to bring new elements to understanding the processes involved in the transmission of cultural values. By taking a child-focused approach, this article discusses how a foundational schema emerges in the production of cultural knowledge, what kind of changes challenge transmission of foundational schemas, and how the current challenges faced by these societies are affecting this transmission.

**Key Words:** Child-focused approach; Social and ecological change; Process of (re)production; Cultural knowledge; Schooling.

### INTRODUCTION

“Foundational schemas” refer to theoretical perspectives that could give us better understandings of Congo Basin hunter-gatherer societies. As Barry Hewlett illustrates, these societies are said to share values, such as egalitarianism, respect for individual autonomy, and the process of giving and sharing (Hewlett, 2014). Egalitarianism refers to the fact that there is not any kind of hierarchical ranking among the different individuals of a society, whereas individual autonomy

implies that one does not coerce others, including children, or tell them what to do (Hewlett, 2014; Hewlett & Roulette, 2016). Moreover, the giving and sharing are often seen in a variety of social contexts, such as not only sharing food on a daily basis with everyone in the community but also information and childcare (Hewlett, 2014). Farming neighbors also have their own foundational schemas including; gender, age hierarchy, communalism, and the material/economic dimensions of social relations (Turnbull, 1965; Vansina, 1990 in Hewlett, 2014).

Given space constraints one mention of the term “schema” will suffice. Discussing the notion of foundational schemas, Bradd Shore notes that “a culture is best conceived as a very large and heterogeneous collection of models” (Shore, 1996: 44). Cultural models can be understood as concrete instantiations of schemas, that is, they share a common general schema (Shore, 1996). The thing about Shore’s intention was that it provided “a bridge between the empiricist concept of culture as ‘objects’ and the cognitive concept of culture as forms of knowledge (or, more pretentiously, as mental representations)” (Shore, 1996: 44). It offered us a paradigm shift in terms of how to describe what culture is. In this work, as Shore put it, we see foundational schemas as any coherence connected to some cultural models at a fundamental level.

In other words, foundational schemas are seen as “ways of thinking and feeling that pervade and cut across many domains of social-emotional life” (Hewlett, 2014: 247) which profoundly influence features of childhood among Congo Basin hunter-gatherers (Hewlett, 2014). Indeed, for instance, the sharing of childcare, that is, “allomaternal care” is one of the cultural models, which features childhood that is common among the different hunter-gatherer societies from the Congo Basin. It implies that individuals, such as adults other than parents, siblings, cousins, or other children, regularly provide infant care (Tronick et al., 1992; Ivey, 2000; Hirasawa, 2005; Fouts & Brookshire, 2009).

Another cultural model characteristic of the Congo Basin hunter-gatherer childhood is the process of weaning. In contrast with farming societies, children from some Congo Basin hunter-gatherer societies are the ones who decide when to be weaned, as for instance among the Bofi foragers (Hewlett, 2014). However, this is not the generally applicable pattern of all hunter-gatherer societies in Africa. Distinction are clearly made when compared with !Xun infants of the Kalahari Desert. Among them, it is reported that “suckling ceases almost completely at around the beginning of the third year after birth regardless of the mother’s next pregnancy” (Takada, 2010: 168).

Congo Basin hunter-gatherer children are also granted autonomy from early childhood (Hewlett, 2014), which is manifested in lack of task assignment, lots of free time to spend according to their wishes, or even in the fact that they are allowed to play with dangerous objects (e.g., machetes).

Previous studies have also recognized that the foundational schemas shaped characteristics of children’s learning environments. Learning environments of the Congo Basin hunter-gatherers are characterized by security and trust in others, highly self-motivated and self-directed learners, easy access to material artifacts and multiple skilled models, and play (Hewlett, 2014). Play is an important venue for children’s learning, and for (re)production of foundational schemas (e.g., Kamei,

2005; Hewlett & Hewlett, 2013; Boyette, 2016; Lewis, 2016). In other words, some play emerges in accordance with the foundational schemas. Lewis indicated that Mbendjele learn gendered complementarity and difference (Lewis, 2014). They also learn an attitude in which “daily hunting and gathering activities are intuitively coordinated without someone telling people what to do.” (Lewis, 2014: 236). This learning is done through a play<sup>(1)</sup> called *massana* (Lewis, 2014). Boyette (2013) illustrated that the play of the Aka children is in accordance with their sharing and egalitarianism, and is less competitive in comparison with the play of Ngandu farmers’ children. Moreover, Boyette (2016) has shown that play enhances the social learning of foraging knowledge and skills. Kamei also wrote about the rules that can be called “spirits of play” among Baka children, that is, aggressiveness, non-competitiveness, and egalitarianism (Kamei, 2005). He noted that competitive rules cannot be found in most of their play, because the targets of aggressiveness are usually wild creatures and not their peers (Kamei, 2005).

Another venue for learning foundational schemas is through subsistence and daily activities. In general, Congo Basin hunter-gatherer children engage in these activities from an early age (MacDonald, 2010; Gallois et al., 2015; Sonoda, 2016).<sup>(2)</sup> Therefore, it seems that these children are learning their foundational schemas through their involvement in play and the daily activities that are embedded in their ecological and social environments.

However, the maintenance of foundational schemas and the transmission of cultural values among hunter-gatherer societies may face several challenges because of the different social and ecological changes occurring in the Congo Basin. Indeed, for more than half a century, the livelihood of these societies has been drastically changed. First, from semi-nomadic small groups living mostly in forest camps, many of them have been settling in larger villages along the logging roads. Thus, they have become more sedentary and live in villages with populations often reaching up to several hundred people. Moreover, despite differences between groups, many of them have adopted agriculture. Among the Baka, for instance, agriculture has become the predominant activity of their daily life (Leclerc, 2012; Gallois et al., 2016). Owing to less oppressive politics in Congo-Brazzaville, the situation is not as severe in the Mbendjele case, where agriculture was adopted as an additional subsistence strategy to hunting and gathering.

Moreover, because of the increasing arrival of external actors in their territory, these societies now have a reduced access to their natural resources and their livelihoods are changing. Indeed, as in other tropical regions (Laurance, 2015), new economic activities such as logging, large-scale farming, and mining are important drivers of changes that affect the standards of living of hunter-gatherers from the Congo Basin. For instance, the tropical forest of Cameroon has witnessed the opening of mining and logging concessions, leading to improvements in the transport system that have also brought poachers, bushmeat, and ivory traders to the area, all having a large impact on the local ecological system (Ichikawa, 2006; Wilkie et al., 2011; Bennett, 2014; Taylor et al., 2015). Therefore, the local population with a long history of interaction with the environment and dependent on natural resources for their subsistence, now face considerable

changes in terms of access and the use of the natural resources; consequently, they have had to adapt their livelihood strategies (Ichikawa & Tanaka, 2001).

However, such changes are not only affecting adults' livelihoods, they also permeate childhood. As Thompson noticed: "Children are influenced directly and indirectly by changes in cultural values, institutions, and social interactions that occur within these social ecologies, which are increasingly being altered by processes associated with globalization" (Thompson, 2012: 188). While some researchers aimed to assess the effects of current changes on hunter-gatherer childhood and cultural learning (Zent, 2013; Gallois, 2015), this paper aims to focus specifically on how these changes impact transmission of key foundational schemas during childhood.

In this work, we try to fill this gap by presenting data from two different hunter-gatherer societies; the Mbenjele and the Baka. We will present how foundational schemas influence child behavior by focusing on everyday interactions between adults and children through the lens of a child-focused approach. We focus on social interaction settings in which children participate at their locally specific venues of cultural transmission. Indeed, as in previous studies regarding the cultural transmission of foundational schemas in the Congo Basin hunter-gatherer societies, our attempt here is to provide better understanding of the process of how foundational schemas are acquired. However, as highlighted by Gumperz and Cook-Gumperz (1982), we can build up the idea that these foundational schemas cannot be taken for granted, but are communicatively produced and defined. In this sense, cultural values can instead be seen as dispersed and emergent in their everyday interaction. Thus, in describing the process of reproduction and acquisition of cultural behaviors and values related to foundational schemas in everyday interaction found in two different societies, we aim to assess in this paper whether foundational schemas have the potential to challenge social and ecological changes.

## CASE STUDIES

### I. Mbenjele BaYaka

Based on ethnographic research among the Mbenjele BaYaka Pygmies in the equatorial rainforest of the Republic of Congo, this section provides insights into the venues of distinct Mbenjele cultural transmission processes. Mbenjele BaYaka are semi-nomadic hunter-gatherers living in Northeastern Congo-Brazzaville. Their population is estimated to 15–20,000 individuals. Both terms, "Mbenjele" and the "BaYaka," are self-ascribed endonyms. The term "BaYaka" is equivalent to "Pygmies," and the "Mbenjele" refers to a specific sub-group.

A foundational schema is the cornerstone of two pro-egalitarian Mbenjele institutions; *mòsámò*, a public speaking protocol, and *mòádžò*, female public mocking re-enactments (Lewis, 2002; 2014). *Mòsámò* and *mòádžò* are employed to provide positive and negative feedback on people's actions. The third Mbenjele institution, *màssáná*, promotes learning egalitarian politics, and social norms and

values through collective ritual and play activities (Lewis, 2014). Owing to limited space we will discuss only how the institution of *mòsámbò* is utilized by adults to address children's and adolescents' inappropriate sexual behavior.

To characterize *mòsámbò* in the simplest way would be to call it public speaking (Lewis, 2014). The speakers utilize the means of *mòsámbò* to organize the economic production of the camp and to communicate news. While the positive speeches encourage bonding, and refer to the good results the group has brought about by cooperating successfully, celebrate an abundance of food, or comment on joy and happiness, negative speeches address transgressions of social norms and values and remind people of the consequences of bad actions on the wellbeing of the group as a whole.

Practically any complaint, criticism, commentary, or advice becomes *mòsámbò* if it adopts certain formal characteristics that define it as *mòsámbò*. A typical speech starts with "*Ókà!*" ("Listen!"), and ends with "*Mámòsiá!*" ("This talk is over."). The speaker raises the voice or shouts, uses short sentences, and makes longer pauses between the words and phrases. Mentioning names of people is perceived as extremely offensive despite the fact that in such a small community, everyone knows who the speaker is talking about.

Mbendjele express openness to sexuality, as reported among other egalitarian hunter-gatherers (Konner, 2005; Sugawara, 2005). However, transgressions of expected sexual behavior in adolescents are often criticized in the *mòsámbò*. Adults judge youngsters for sleeping around, disapprove of public instances of sexual behavior, inappropriate flirting, and sexual relationships with the neighboring farmers, as the following ethnographic example illustrates.

Àndzélé (17 years old) broke up with her Mbendjele boyfriend and began dating a young, but married farmer man. At the beginning, he was coming over to Àndzélé's house to share his palm wine with her and her family. By sharing palm wine with the family members of the girl, a boy signals that he wants to marry her. People began commenting on it, but it was not yet such a serious issue. However, once this young man stayed in the house for the whole night with the approval of Àndzélé's parents, the whole community began to gossip about Àndzélé and her parents as well. People talked about three main issues. First, Àndzélé was judged a prostitute (*yángí*), because she was seeking extra food, wine, and gifts in exchange for sex. Second, Àndzélé behaved in an unclean manner (*mbíndò*) because she slept with the farmer. Lastly, the parents of Àndzélé were criticized for quietly accepting this situation, for denying this relationship in public, and for accepting gifts from the farmer. After three days of intensive gossip, Àndzélé's mother got very upset and loudly shouted out her *mòsámbò*: "Listen! My child is not with the farmer! My child doesn't have a boyfriend! Let my child be!" Àndzélé responded back to everyone: "You only talk, and talk, talk. Yes, my child is good. She is not with [the] farmer. She is a good child. Being with the farmer is not good!"

However, other people continued by contributing *mòsámbò*. For example, Dzèméni (45–50 years old) had a daughter of a similar age to Àndzélé, and these two girls were very good friends. Dzèméni warned Àndzélé (without mentioning her name) that she did not want her (Dzèméni's) child to be a "prostitute" to



those farmer-animals (*bàniàmà*). Džèménì was worried about Àndžélé's bad influence on her own child: "Stop searching for problems! I don't want my child to take the way of rudeness! My child is a joy! I am done with this topic!"

Džèménì, by pointing to the danger of Àndžélé's influence on her daughter, made a clear and public statement that this sort of relationship is "bad." Doing so, Džèménì taught younger girls about its badness. While gossip certainly played a role in teaching about the wrongness of "being together" with a farmer, the power of the *mòsámbo* lies in its public expression, where the representations of what most people think are shared with the whole community.

Daiji Kimura's study of *bonango*—an "addressee-unspecified loud speech" among Bongando farmers in Democratic Republic of Congo (Kimura, 1990) presents some similar qualities to *mòsámbo*. Both *bonango* and *mòsámbo* are spoken loudly, with long pauses and exaggerated gestures. Both are also to communicate personal concerns and opinions about others' actions; and both are sought as a mode of teaching (Kimura, 1990: 11–12).

At the beginning of this paper, we have claimed that one of the significant foundational schemas of Congo Basin hunter-gatherer societies is respect for personal autonomy. The public expostulation of Àndžélé's behaviour may seem as if her personal autonomy was not respected. While this *mòsámbo* exchange was a strong "shaming" of Mbendjele-farmer intimate relationship, none of the speeches included mentioning of Àndžélé's name. Such strategy prevents from direct accusation or enforcement of ceasing such relationship, and hence allowing people's opinions to be shared while respecting one's (here Àndžélé's) personal decision of being in such relationship.

The content of *mòsámbo* speeches regarding the behavior of children indicates the issues that Mbendjele adults consider to be highly important for children to understand because they share and discuss them so publicly. As mentioned above, these speeches must represent what most people think. If Džèménì or anybody else were to claim that "the relationship with the farmer is acceptable," it could create severe disputes. *Mòsámbo* rejects individual attempts to superimpose people's personal opinions over the opinions of the group. It also shows that responsibilities in rearing children are shared among the adults of the group, as the speaker can be any member of the community.

While the Mbendjele example illustrates adults' communication with children in an attempt to guide children's learning, the following examples reflect on how Baka children's social interactions inform us of the ways they are acquiring their cultural knowledge while performing their daily activities.

## II. Baka

This section presents some summarized insights Gallois and Sonoda collected through long-term fieldwork (18 months between 2012 and 2014 for Gallois and 19 months between 2009 and 2014 for Sonoda) among the Baka from southeastern Cameroon. Mixed methods combining qualitative and quantitative approaches were used to obtain these data.

The Baka population is estimated at between 30,000–70,000 inhabitants spread

among four countries, the majority of whom live in Cameroon. As shown earlier, they have undergone several changes since the 1950s. However, in spite of such changes, Baka children maintain a high degree of involvement in subsistence activities. They are involved in activities such as hunting, gathering, fishing, and agricultural tasks. As can be seen in other societies (Rogoff et al., 2007; Gaskins & Paradise, 2010; Zarger, 2010), the performance of subsistence activities is the keystone for Baka children to learn their ecological and cultural knowledge (Gallois, 2015).

From an early age, Baka children perform many domestic tasks. Every day they fetch water, collect firewood, but also clean the house, cook, and take care of children. These different activities are crucial for the acquisition of cultural and ecological knowledge (Gallois et al., 2015). According to Baka adults, they are central to children's development as they allow children to practice knowledge and skills.

During childhood, there is also a high degree of egalitarianism and respect for autonomy. Indeed, Baka children are allowed to make their choice to accompany adults or not, when adults are engaged in their own activities. There is no obligation imposed on them. In that sense, children's daily lives are mostly guided by their own wishes.

Looking at children's daily activities also allows us to understand how they organize themselves and how such types of organization shape their "cultural learning" (Tomasello et al., 1993). Tomasello and colleagues claimed that in cultural learning, the learner is not just directing his/her attention to the location of the other's activity, rather attempting to see a situation from this person's point of view, that is the learner is doing the activity relying on "perspective taking" (Tomasello et al., 1993: 496). First, with respect to the main insight resulting from our research with children aged 5–16, we saw that most of their subsistence activities are performed outside of the parental sphere (Gallois, 2015). Indeed, although parents might share knowledge with their children during some events such as telling tales, co-sleeping, and performing music and dances, they do not engage with children's subsistence activities. A similar pattern is also observed among other societies, such as the !Xun San (Takada, 2010). In this sense, children are performing and practicing their knowledge and skills without parents, and thus learning with other models. Moreover, few adults other than parents are present in daily activities, as they are mostly engaged in some subsistence activity, such as agriculture and fishing among girls (Gallois, 2015). Therefore, Baka children are mostly performing their daily activities and thus acquiring their knowledge and skills with other children.

The mere absence of adults during children's subsistence activities contributes to Baka children's independent learning process, and thus to the development of personal autonomy. Such an independent learning process is considered a keystone of Baka cultural learning. Indeed, adults are not guiding children while performing their activities; rather they are present nearby, watching what their children do, and if the task is not well done, waiting for them to finish it and then showing them again, as this Baka man reported to us:



*When my child is trying to build a car toy in Raphia spp, I first wait for him to finish it. If, at the end of the process, I see that it did not work, then I sit close to him, and build another one. I do not say anything, but rather show him. Then, by observing what I am doing, he can imitate it and try again to build his own car toy.*

Sonoda (2016) reported that similar attitudes were seen among Baka adults when children participated in hunting, gathering, and other everyday activities with them. Amid the activities, children are more likely to talk a lot about the behavior of adults who are working in front of them, and what children had experienced in past activities. Children often take the initiative in conversation with adults. In effect, this is realized by adults' support, such as trying to listen attentively to children, and giving responses using the repetition of children's utterances. For instance, when an adult is butchering a duiker, child B is helping him by holding the animal's legs. During this activity, B talks to him about the story that he heard a sound this animal made when this animal was struck the previous night in the rainforest. B had followed the hunting that night. Once B explained "it cries mh, huu," the adult repeated B's utterance, which allowed B to continue vividly recounting the rest of the story (Sonoda, 2016). These supportive behaviors of adults can acknowledge the children's own experience and their judgment, moreover, they endow children with new knowledge (Sonoda, 2016).

## DISCUSSION

We have outlined the characteristics of Congo Basin hunter-gatherer foundational schemas, and the data presented in our case studies have shed light on specific venues of production of cultural knowledge. In this section, we aim to discuss first how foundational schemas emerge in the production of cultural knowledge, and how these two concepts, namely, foundational schemas and cultural knowledge, are related to each other. In the second part, we argue how the social and ecological changes currently faced by Congo Basin hunter-gatherer societies challenge foundational schemas, and lastly, how we can understand the foundational schemas referring to these changes.

### I. Cultural Knowledge Production and Foundational Schemas

While Baka case studies have illuminated cultural knowledge production within children's everyday interactions, the example of the Mbendjele has illustrated the jointly constructed aspect of cultural knowledge production. In these contexts, we argue how foundational schemas are communicatively produced and emerge in the venues of cultural knowledge production, how they are put into effect, and what this gives to children.

Let us remind ourselves of the example of the car toy. As reported by the Baka man, he did not guide his child while performing this activity, but was

present and nearby. Nothing was better evidence of the adult's foundational schema than the fact that he did not try to pick the toy up, and remake it. In this sense, following the principle of respect for autonomy and egalitarianism, the adult did not judge his child's car but rather invited his child (without saying anything) to watch him building another one. Then, this man gave his child the opportunity to build his own car toy, following what he saw. Similar behavior has also been found among other Baka people when performing hunting and gathering activities, as Sonoda reported (2016). In that sense, we can see that by performing their daily activities and through acquiring knowledge and skills, children also learn ways of feeling and thinking, i.e., foundational schemas, thanks to the behavior modelled by adults with them. Although we can assume that children might not understand what the foundational schema itself is, they come to understand how they should behave in their actual experience with others, which is a process of learning.

## II. Current Changes

As mentioned, current changes in hunter-gatherer societies also affect children's daily life. Among them, one of the most important changes faced by these children is schooling. Hunter-gatherer children have easier access to schooling because of schools run by either the national government or by external institutions (non-governmental organizations and missionaries). In many communities, there is either a private or public school that the children can attend. However, although schooling may provide children with essential skills to better face the current changes (thanks to literacy and numeracy), it can be seen as endangering the maintenance of cultural knowledge and foundational transmission of schemas (see Kamei, 2001).

Indeed, the foundational schemas of outsider-imposed schooling largely contrast with hunter-gatherer egalitarianism. For example, the curricula of such schools promote hierarchy, and utilize punishment for non-compliance. Mbendjele and Baka adults avoid organizing and structuring children's time or what these children should be learning. Schools do the opposite; children have to attend and learn what is in their "timetables." Moreover, as mentioned above, Congo Basin hunter-gatherer children engage in non-competitive play. In schools, however, competitiveness is required. Teachers praise the students who show that they know the answers, or those who answer first. Among other contrasts practiced in the school are employing corporal punishment, and disvaluing polyphonic singing. When attending school, children are absent from hunting and gathering trips, as well as co-participation in allomothering and child caretaking, which may have an impact on their acquisition of cultural knowledge and skills. However, school attendance varies across cultures and the impact of school depends on the society. Gallois et al. (2015) observed that the school attendance of Baka children was very limited, suggesting that schooling does not have a real impact on cultural knowledge transmission. Indeed, Baka children are still highly engaged in subsistence-related activities (i.e., hunting and gathering), that contribute to the transmission of their cultural knowledge. In contrast, outsider-imposed schools

play an important role in Mbendjele children's lives. Bombjaková claims that Mbendjele children are presented with different social norms and values in schooling.

### III. How Can We Understand Foundational Schemas?

We saw here that the pathways of transmission of Mbendjele cultural knowledge can be considered as a cultural brake to change as well as groupthink concerning what value is for the community. Indeed, thanks to *mòsámbò*, people are reminded of what the “good” ways are that they should be aware of. In this sense, we may suggest that using these public speeches protects people from being influenced by changes that may occur. Indeed, this is important in facing the issues that emerge in terms of the schools' values.

*Mòsámbò* also functions as a powerful means of communicating opinions about these schools. Among other things, *mòsámbò* is employed by adults to communicate the “threatening” nature of schools or other outsider-imposed “ideologies that contrasted with the Mbendjele culture.” For example, adults were concerned about children's relationship to the environment of the forest. The forest was defined by the school as a dangerous place for children to go, which largely contrasts with the Mbendjele's view. In addition, Sonoda also heard that Baka people often called the cultural knowledge and holistic wisdom concerning the forest “the school of [the] forest” (*sikulù na bele*). Thus, in an Mbendjele society, *mòsámbò* was employed as a means of arguing about and judging what cultural knowledge was worth, and making children understand how foundational schemas function in the community.

Gallois suggested that Baka children's “independent” learning processes contribute to the development of personal autonomy. She also reported how the collective way in mixed-aged children's groups performed allowed them to learn from each other; more importantly they learned through a direct and intimate relation with their environment (Gallois, 2015). Importantly, this is not to say that adults never play a role in the process of children learning cultural knowledge. We can be reminded of the Baka man who builds a car toy next to the child. Adults are likely to leave a decision to children, although they are present nearby.

Given these examples, different values can coexist within the community, and this rule can be applied to children's behavior. However, this is not to say that any values in different aspects of their lives are accepted. Although there is a high respect for individual autonomy rather than open judgment of others' actions, it is not that one can do whatever one likes. There should also be a tacit understanding within the community. Based on a case study of the Batek in Malaysia, Endicott states that “cooperative autonomy was based on a combination of obligations to the group and protections for individuals against coercion by others” (Endicott, 2011: 81). The personal autonomy of Congo Basin hunter-gatherer societies is also considered to be realized according to the delicate balance between individual and community, and achieved in interaction between adult and child, or within the community.

So far, we have illuminated how foundational schemas were organized and emerged in everyday interaction. We can emphasize here that the strong link between the foundational schemas and the environment of the forest is of utmost importance. It is apparent from Mbendjele adult communication in *mòsámbo* and independent learning activities among Baka children. Moreover, this aspect was clearly apparent when compared with the activities of outsider-imposed schooling. Considering the important gap between the process of knowledge acquisition in school and the accepted way of learning their cultural knowledge and values, it seems crucial to better adapt the school curricula to both children's daily life and their way of learning. In order to achieve these aims, initiatives already exist among some hunter-gatherer societies thanks to various international and national NGOs. For instance, in Cameroon, schools specifically oriented to Baka children have been established. The institution, "Frères des Ecoles Chrétiennes" (FEC), developed a project titled "Projet Pygmées." It provided a specific school "Centre d'Education de Base" (CEB) that covered the first three grades and used an adapted method called ORA ("Observer, Réfléchir, Agir" [Observing, Thinking, Acting]) (Kamei, 2001). This initiative has encouraged Baka schooling through a variety of instruments; reduction of expenses (including the provision of school stationary, and children's school fees registration), the establishment of schools in Baka villages, classes taught in the Baka language, and a curriculum adapted to Baka livelihoods (Kamei, 2001). However, despite the efforts of this institution, it continues to be a challenge for Baka children to attend school in the same way that it is a challenge for the education system to be adapted to forest life (Kamei, 2001). Moreover, it still mimics the traditional way of teaching and cannot genuinely allow children to be at the core of their education. In this sense, we argue that another pedagogical approach is needed, which allows children to be more active in the process of learning, with a curriculum more intimately embedded in their social and ecological environment; this approach should also base its pedagogy on the foundational schemas present among these societies. In this work, we have illustrated pedagogies that support children's independent learning process and their initiatives. We assume that describing pedagogy, which people undertake in daily life, contributes to school improvement.

Let us be reminded of what Ingold and Lucas (2007) stated: "novices are not passive recipients whose mental capacities are waiting to be 'filled up' with content peculiar to their tradition, but are rather active participants in a process in which knowledge is forever being created and discovered anew" (Ingold & Lucas, 2007: 288). In this sense, Congo Basin hunter-gatherer children are active participants in producing and acquiring cultural knowledge in their ecological and social environment. For instance, Gallois and colleagues showed recently that Baka children already have considerable ecological knowledge (Gallois et al., 2017); more importantly, they seem to have specific knowledge that is not shared with adults. Cultural knowledge is generated on-site. It should be noted that understanding foundational schema from an emic perspective is possible when we look at the venue in which cultural knowledge is generated in detail. Further study will be needed in this line of research.

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## NOTES

- (1) Lewis notes that Mbendjele do not make the distinction between “ritual” and “play” to translate *massana* (Lewis, 2014).
- (2) The importance of subsistence activities for these children is also indicated by a human biological approach. For example, Hagino and colleagues noted that the forest lifestyle of the Baka can provide their children with a rich nutritional status (Hagino et al., 2014).

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